

CLAIM AMENDMENTS

1. (previously presented) A composition comprising the product prepared by heating together:

(a) a succinimide dispersant and
(b) 2,5-dimercapto-1,3,4-thiadiazole or a hydrocarbyl-substituted 2,5-dimercapto-1,3,4-thiadiazole which is substantially insoluble in a hydrocarbon oil of lubricating viscosity at 25°C, and

(c) a borating agent selected from the group consisting of boric acid, boron trioxide, and alkyl borates of the formula $(RO)_xB(OH)_y$ wherein x is 1 to 3 and y is 3-x, and where R is an alkyl group containing 1 to 6 carbon atoms, and optionally

(d) an inorganic phosphorus acid or anhydride
said heating being sufficient to provide a reaction product of (a), (b), (c) and optionally (d) which is soluble in said hydrocarbon oil at 25°C.

2. – 5. (cancelled)

6. (original) The composition of claim 1 wherein component (b) is 2,5-dimercapto-1,3,4-thiadiazole.

7. (previously presented) The composition of claim 1 wherein component (b) is a hydrocarbyl-substituted 2,5-dimercapto-1,3,4-thiadiazole wherein the hydrocarbyl group or groups contain a total of less than about 8 carbon atoms.

8. (currently amended) The composition of claim 1 wherein the borating agent is boric acid or boron trioxide ~~an inorganic borating agent~~.

9. (cancelled)

10. (previously presented) The composition of claim 1 wherein the inorganic phosphorus acid or anhydride is phosphoric acid, phosphorous acid or an anhydride thereof.

11. (previously presented) The composition of claim 1 wherein both the borating agent and the inorganic phosphorus acid or anhydride have been heated with the dispersant and the 2,5-dimercapto-1,3,4-thiadiazole or hydrocarbyl-substituted 2,5-dimercapto-1,3,4-thiadiazole.

12. (previously presented) The composition of claim 1 wherein components (a), (b), and (c) and optionally (d) have been heated together at about 80 to about 200°C for at least about 0.5 hours.

13. (previously presented) The composition of claim 1 wherein components (a), (b), and (c) and optionally (d) have reacted as evidenced by the evolution of H₂S or H₂O.

14. (previously presented) The composition of claim 1 wherein components (a), (b), and (c) and optionally (d) are heated together in a hydrophobic medium.

15. (original) The composition of claim 14 wherein the hydrophobic medium is an oil of lubricating viscosity.

16. (previously presented) The composition of claim 15 wherein the oil of lubricating viscosity is retained in the composition.

17. (previously presented) The composition of claim 1 wherein the relative amounts, by weight, of components (a), (b), (c), and (d), prior to heating, are about 100 of (a): (0.75 to 6 of (b)) : (0.075 to 7.5 of (c)) : (0 to 7.5 of (d)).

18. (previously presented) The composition of claim 1 wherein the relative amounts, by weight, of components (a), (b), (c), and (d), prior to heating, are about 100 of (a): (1.5 to 3 of (b)) : (1.5 to 4.5 of (c)) : (0 to 4.5 of (d)).

19. (previously presented) The composition of claim 1 wherein the reaction product comprises about 0.5 to about 2.5 percent by weight S derived from component (b) and ~~either~~ about 0.2 to about 0.6 percent by weight B from component (c), on an oil free basis.

20. (original) A composition comprising an oil of lubricating viscosity and the reaction product of claim 1.

21. (original) The composition of claim 20 wherein the amount of the reaction product is about 0.5 to about 90 percent by weight of the composition.

22. (previously presented) The composition of claim 21 wherein the amount of the reaction product is about 0.5 to about 5 percent by weight.

23. (previously presented) The composition of claim 21 wherein the amount of the reaction product is about 20 to about 90 percent by weight.

24. (original) A method for lubricating a mechanical device, comprising supplying thereto the composition of claim 20.

25. (original) The method of claim 24 wherein the mechanical device is an internal combustion engine.

26. (original) The method of claim 24 wherein the mechanical device is an automatic transmission.

27. (previously presented) A method for preparing a composition comprising heating together a mixture of:

(a) a succinimide dispersant and

(b) 2,5-dimercapto-1,3,4-thiadiazole or a hydrocarbyl-substituted 2,5-dimercapto-1,3,4-thiadiazole which is substantially insoluble in a hydrocarbon oil of lubricating viscosity at 25°C, and

(c) a borating agent selected from the group consisting of boric acid, boron trioxide, and alkyl borates of the formula $(RO)_xB(OH)_y$ wherein x is 1 to 3 and y is 3-x, and where R is an alkyl group containing 1 to 6 carbon atoms and optionally

(d) an inorganic phosphorus acid or anhydride,
said heating being sufficient to provide a reaction product of (a), (b), (c) and optionally (d) which is soluble in said hydrocarbon oil at 25°C.

28. (previously presented) A composition comprising the product prepared by heating together:

(a) a succinimide dispersant and

(b) 2,5-dimercapto-1,3,4-thiadiazole or a hydrocarbyl-substituted 2,5-dimercapto-1,3,4-thiadiazole which is substantially insoluble in a hydrocarbon oil of lubricating viscosity at 25°C, and

(c) boric acid, and optionally

(d) an inorganic phosphorus acid or anhydride,

said heating being sufficient to provide a reaction product of (a), (b), (c) and optionally (d) which is soluble in said hydrocarbon oil at 25°C.

29. (cancelled).

30. (new) A composition comprising the product prepared by heating together:

(a) 100 parts by weight of a succinimide dispersant, and

(b) about 1.5 to about 3.0 parts by weight of 2,5-dimercapto-1,3,4-thiadiazole, and

(c) about 1.5 to about 7.5 parts by weight of a borating agent selected from the group consisting of boric acid and boron trioxide, and optionally

(d) 0 to about 4.5 parts by weight of an inorganic phosphorus acid or anhydride;

said heating being sufficient to provide a reaction product of (a), (b), (c) and optionally (d) which is soluble in a hydrocarbon oil of lubricating viscosity at 25°C.